T0926C0" 25E21660

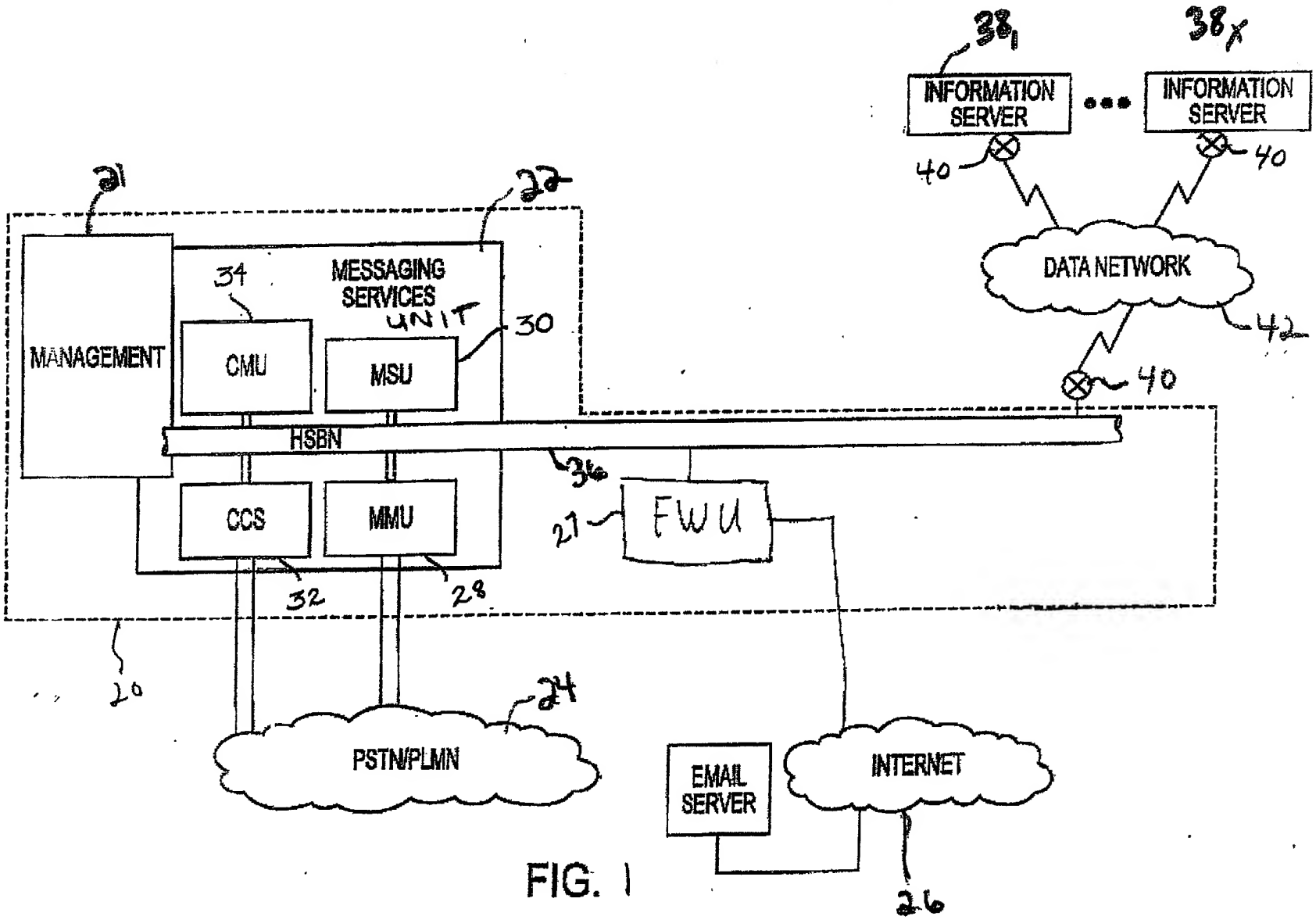

FIG. 1

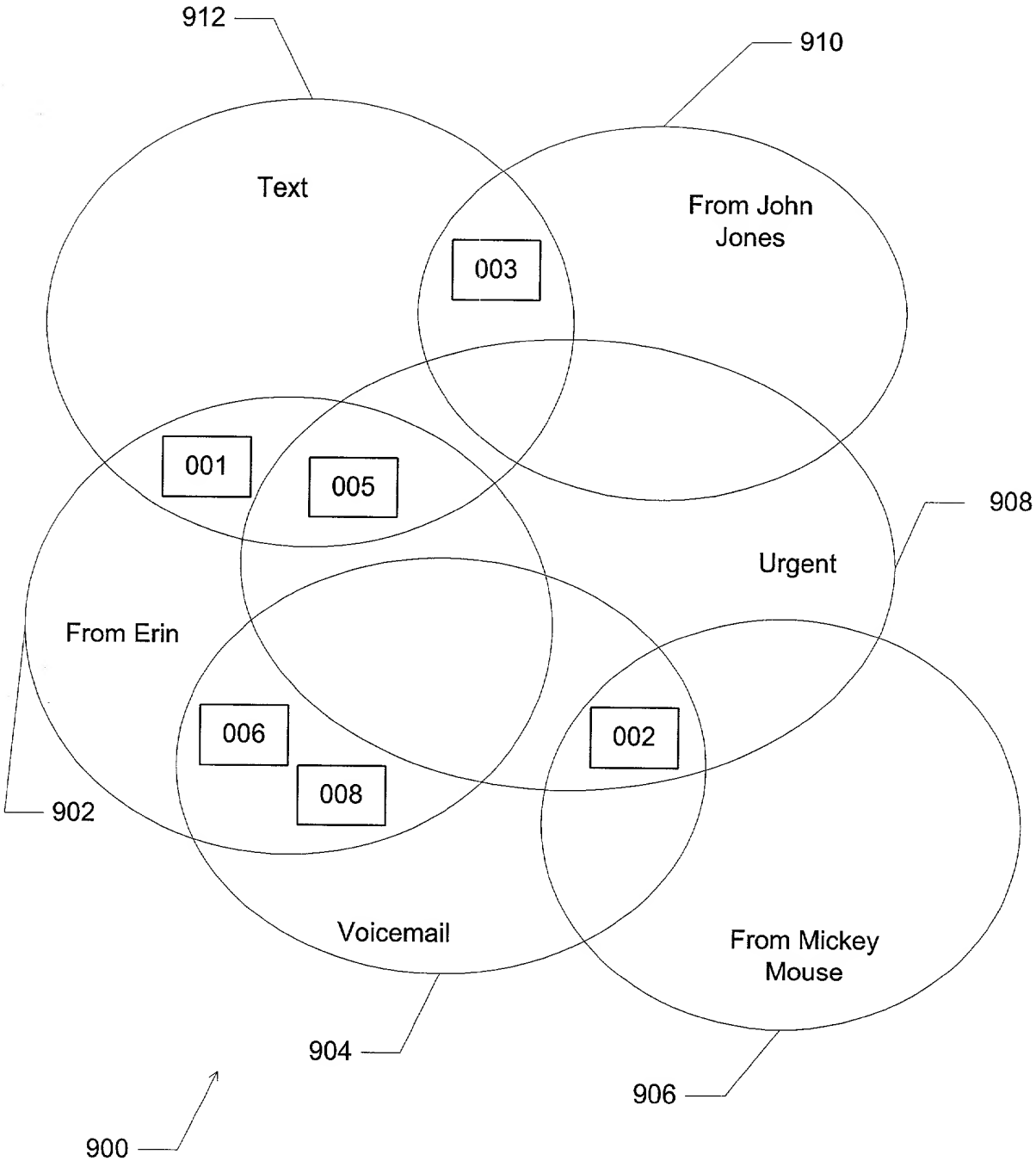

FIG 2: **Message Lists as Subsets**

Figure 3. MESSAGE DATABASE

MESSAGE ID	001
FROM	Erin Panttaja
STATUS	new
READ?	true
URGENT?	false
CONTENTS	001.txt
TYPE	text
RA?	false
DATE	4/14/2001
SUBJECT	Meeting Tuesday

This is the database entry for message 001 from Erin Panttaja, partway through the call after which it was received

FIG. 3

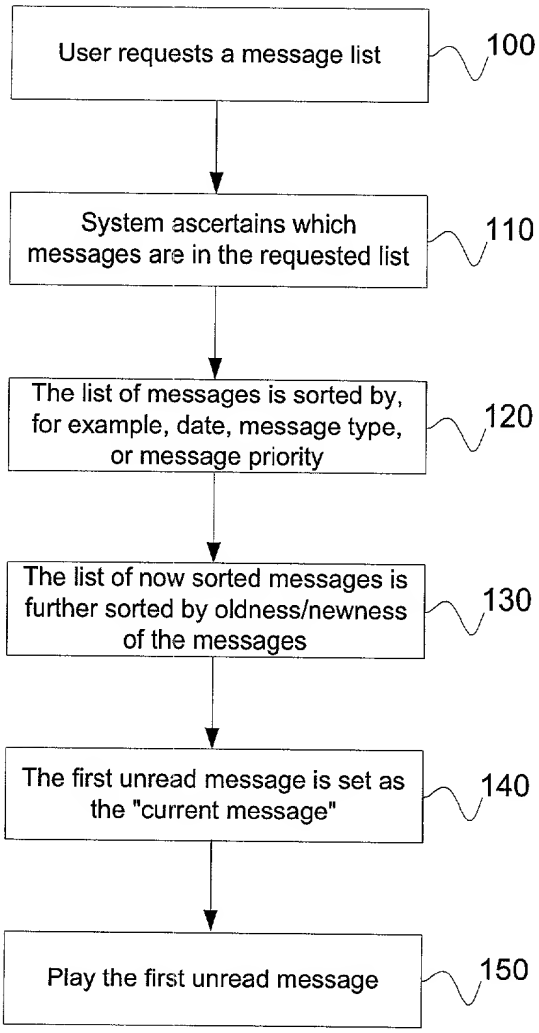
User requests a message list
100
System ascertains which messages are in the requested list
110
The list of messages is sorted by, for example, date, message type, or message priority
120
The list of now sorted messages is further sorted by oldness/newness of the messages
130
The first unread message is set as the "current message"
140
Play the first unread message
150

FIG. 4

Figure 5. Several Message Lists

100: Message queue

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
002	Mickey Mouse	old	true	true	002.ra	vmail	false	4/13/2001	
003	John Jones	new	false	false	003.txt	text	false	4/14/2001	Re:Cube assg.
004	Jan Smith	new	true	true	004.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
009	John Jones	old	true	false	009.ra	vmail	false	4/12/2001	
010	Remi Katri	old	true	true	010.ra	vmail	false	4/10/2001	

200: "play my messages"

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
004	Jan Smith	new	true	true	004.ra	vmail	false	4/14/2001	
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
003	John Jones	new	false	false	003.txt	text	false	4/14/2001	Re:Cube assg.
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
002	Mickey Mouse	old	true	true	002.ra	vmail	false	4/13/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
010	Remi Katri	old	true	true	010.ra	vmail	false	4/10/2001	
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France
009	John Jones	old	true	false	009.ra	vmail	false	4/12/2001	

300: "play my messages from Erin Panttaja"

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams

400: "play my text messages"

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
003	John Jones	new	false	false	003.txt	text	false	4/14/2001	Re:Cube assg.
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France

FIG. 5

Figure 6. Changing Message Lists

100: Message queue

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
002	Mickey Mouse	old	true	true	002.ra	vmail	false	4/13/2001	
003	John Jones	new	false	false	003.txt	text	false	4/14/2001	Re:Cube assg.
004	Jan Smith	new	true	true	004.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
009	John Jones	old	true	false	009.ra	vmail	false	4/12/2001	
010	Remi Katri	old	true	true	010.ra	vmail	false	4/10/2001	

200: "play my messages from Erin Panttaja"

ID	FROM	STATUS	READ?	URGENT ?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams

300: "play my messages"

ID	FROM	STATUS	READ?	URGENT ?	CONTENTS	TYPE	RA?	DATE	SUBJECT
004	Jan Smith	new	true	true	004.ra	vmail	false	4/14/2001	
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
003	John Jones	new	false	false	003.txt	text	false	4/14/2001	Re:Cube assg.
006	Erin Panttaja	new	true	false	006.ra	vmail	false	4/14/2001	
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
002	Mickey Mouse	old	true	true	002.ra	vmail	false	4/13/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
010	Remi Katri	old	true	true	010.ra	vmail	false	4/10/2001	
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France
009	John Jones	old	true	false	009.ra	vmail	false	4/12/2001	

400: "play my messages from Erin Panttaja"

ID	FROM	STATUS	READ?	URGENT ?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
006	Erin Panttaja	new	true	false	006.ra	vmail	false	4/14/2001	
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams

FIG. 6

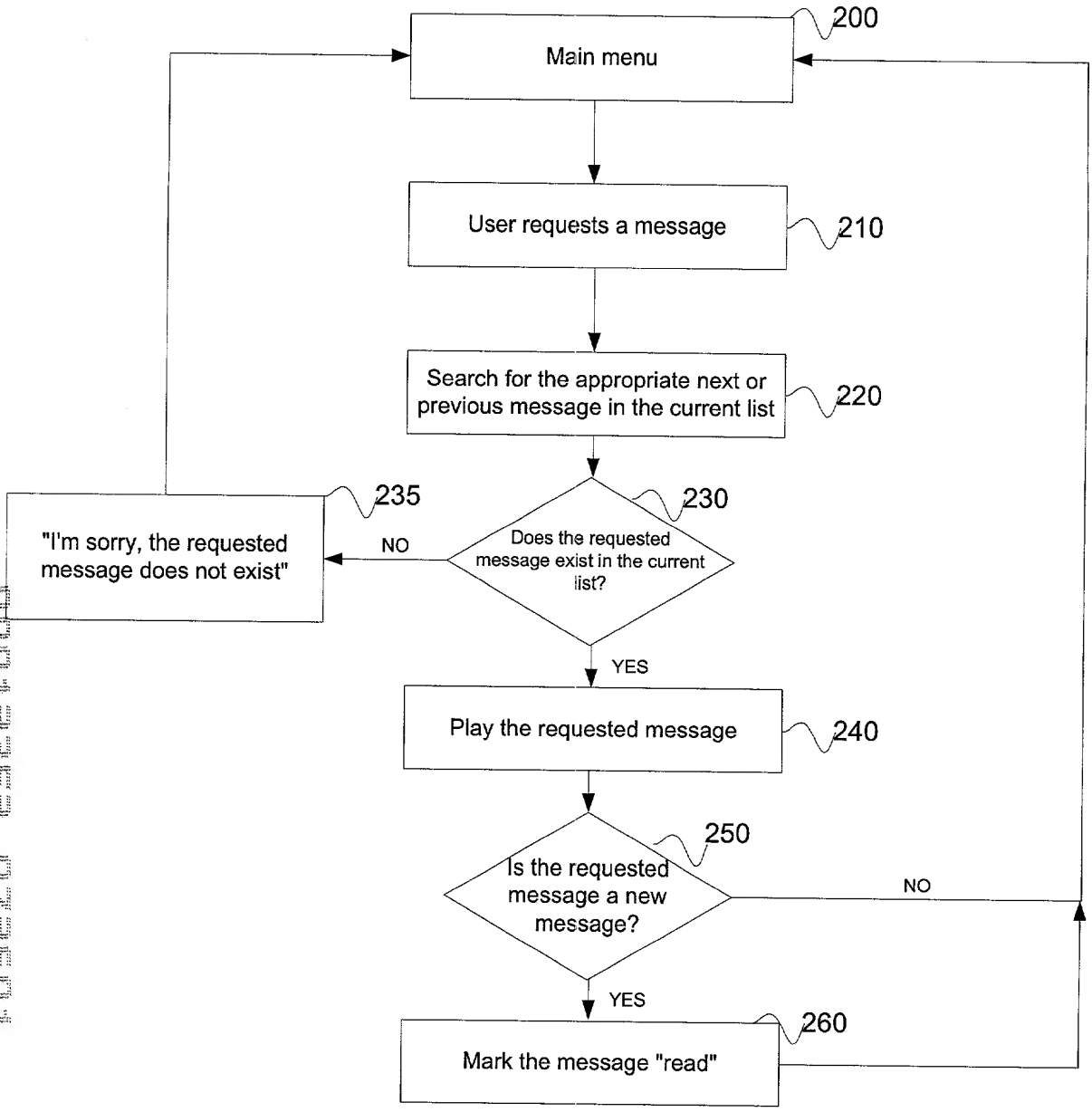
Main menu
200
User requests a message
210
Search for the appropriate next or previous message in the current list
220
Does the requested message exist in the current list?
230
NO
"I'm sorry, the requested message does not exist"
235
YES
Play the requested message
240
Is the requested message a new message?
250
NO
YES
Mark the message "read"
260

FIG. 7

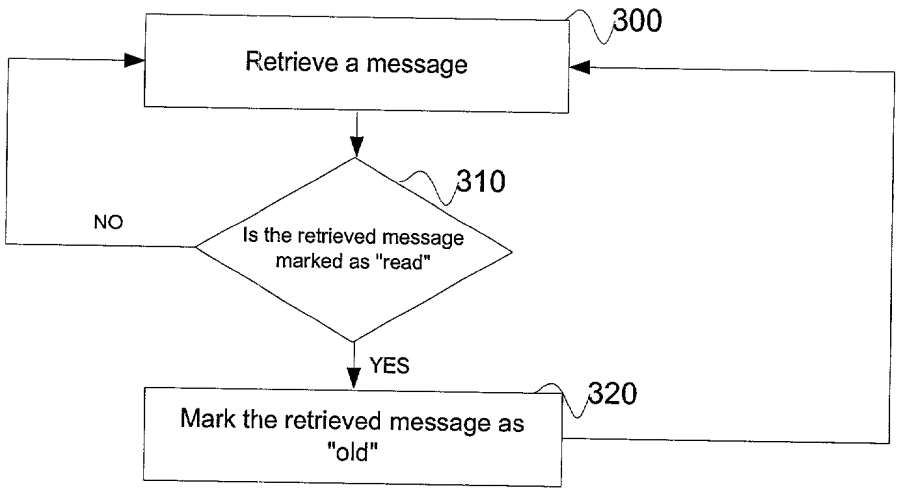
300
Retrieve a message
310
Is the retrieved message marked as "read"
NO
YES
320
Mark the retrieved message as "old"

FIG. 8

Figure 9. End-of-session processing

100: Message queue at end of call

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	new	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
002	Mickey Mouse	old	true	true	002.ra	vmail	false	4/13/2001	
003	John Jones	new	true	false	003.txt	text	false	4/14/2001	Re:Cube assg.
004	Jan Smith	new	true	true	004.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
009	John Jones	old	true	false	009.ra	vmail	false	4/12/2001	
010	Remi Katri	old	true	true	010.ra	vmail	false	4/10/2001	

200: Message queue after processing

ID	FROM	STATUS	READ?	URGENT?	CONTENTS	TYPE	RA?	DATE	SUBJECT
001	Erin Panttaja	old	true	false	001.txt	text	false	4/14/2001	Meeting Tuesday
002	Mickey Mouse	old	true	true	002.ra	vmail	false	4/13/2001	
003	John Jones	old	true	false	003.txt	text	false	4/14/2001	Re:Cube assg.
004	Jan Smith	old	true	true	004.ra	vmail	false	4/14/2001	
005	Erin Panttaja	old	true	true	005.txt	text	false	4/6/2001	1100 diagrams
006	Erin Panttaja	new	false	false	006.ra	vmail	false	4/14/2001	
007	Katya Shadhouse	old	true	false	007.txt	text	false	4/3/2001	Re:Trip to France
008	Erin Panttaja	new	false	false	008.ra	vmail	false	4/14/2001	
009	John Jones	old	true	false	009.ra	vmail	false	4/12/2001	
010	Remi Katri	old	true	true	010.ra	vmail	false	4/10/2001	

FIG. 9

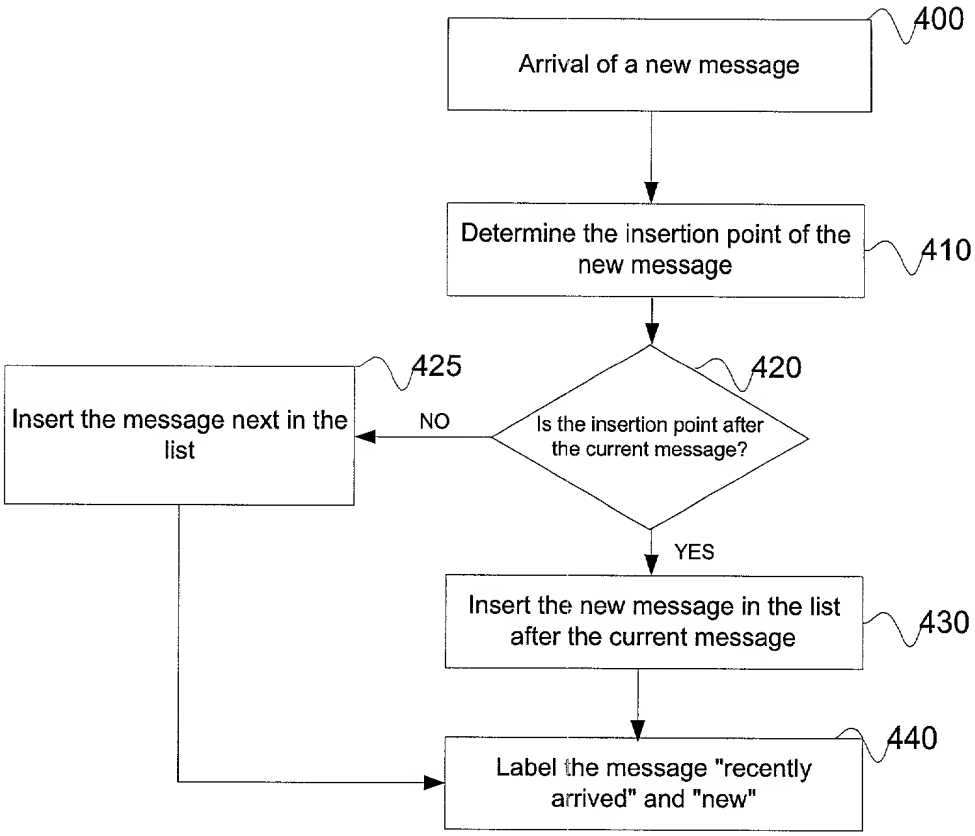
400
Arrival of a new message
Determine the insertion point of the new message
410
425
420
Insert the message next in the list
NO
Is the insertion point after the current message?
YES
Insert the new message in the list after the current message
430
440
Label the message "recently arrived" and "new"

FIG. 10

Figure 11. Message List Keys

Defined keys:	values:
medium	voice, text, fax
priority	urgent, new, old
sender	<the list of names in subscriber's address book>
start_date	<valid date>
end_date	<valid date>

Frame 1: medium:voice, priority:urgent, current:2

Frame 2: medium:voice, priority:new, sender:Pierre, current:finished

Frame 3: priority:urgent, sender:Martin, current:3

Frame 4: medium:text, priority:urgent, sender:Raymond, current:finished

FIG. 11

Figure 12. Message List Descriptors

Example A:

Request: "Play my urgent text messages"

Frame: medium:text, priority:urgent

Example B:

Request: "Play my messages from Pierre since March 1st" (on the 20th of March)

Frame: sender:Pierre, start_date:03/01/2001, end_date:03/20/2001

Example C:

Request: "Play my old voice messages from Pierre"

Frame: medium:voice, priority:old, sender:Pierre

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FIG. 12

Figure 13. Sample Frames

Frame 1: medium:voice, priority:urgent, current:2

Frame 2: medium:voice, priority:old, sender:Pierre, current:finished

Frame 3: priority:urgent, sender:Martin, current:3

Frame 4: medium:text, priority:urgent, sender:Raymond, current:finished

Frame 5: medium:text, priority:urgent, current:0

FIG. 13